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Tipulidae (Dipt.) in Central and North Wales

By R. M. PAYNE and A. E. STUBBS

We spent the first few days of June 1966 collecting Diptera in Central and North Wales. Entering Wales at Stanner Rocks, Radnor, we collected by the River Wye and in one or two other places near Rhayader, and then moved north to spend our second night at Dolgellau, collecting on the barren hills of Montgomeryshire during the morning, and on the southern slopes of Cader Idris in the afternoon. On the third day, we had a successful morning by the side of the Mawddach estuary near Llanelltyd, followed by some very warm hours on the dunes at Llanbedr and Harlech, and then a dash inland to the wood at the head of Cwm Bychan. That night we stayed at Harlech. The following morning we explored the wooded ravine between Maentwrog and Trawsfynydd Reservoir and in the afternoon we moved into Caernarvonshire. Unfortunately, the weather now broke and cut short our collecting near Criccieth, but on our final day we managed some useful stops by the roadside on our way south, culminating in a productive couple of hours in a wood at Llanfair Caereinion.

We are grateful to the Nature Conservancy for permission to visit and collect in a number of Reserves.

The following notes, arranged by county and habitat, deal with Tipulidae, of which we found and identified 80 species (over one quarter of the British fauna) and Ptychopteridae, of which we found two species. Other flies collected (mainly by A.E.S.) will be the subject of a subsequent article.

Little is known of the ecological requirements of Tipulidae, but since the early stages of many species live in damp soil, some comment on geology and rainfall (taken from the 10 miles-to-the-inch rainfall map published by the Ordnance Survey) is included. Potential water deficit is probably more important than actual rainfall, but no detailed maps are available. The habitat descriptions include aspect, slope and vegetation as thought relevant, factors which affect both soil drainage and the life of the adult insect.

RADNOR, V.C. 43

STANNER ROCKS. G.R. 32/262583. Annual rainfall 35-40 ins. Sweeping basic grassland here on 1st June produced only a single *Tipula vernalis* Mg.

MARTEG BRIDGE. G.R. 22/952715. Rainfall 50 ins. We spent some time by the River Wye 2½ miles north of Rhayader (alt. 740 feet) on 1st June. Sweeping in the lush vegetation on the steep wooded bank, where ferns, Giant Woodrush and Meadow Sweet were growing under Alder and

Sycamore, we took *Tipula variicornis* Sch., *T. montium* Egger, *Limonia nubeculosa* Mg., *Dicranomyia mitis* (Mg.), *Rhipidia maculata* (Mg.), *Trichyphona immaculata* (Mg.), *Elaeophila submarmorata* Verrall, *Lipsothrix remota* (Walker), *L. errans* (Walker), *Cheilotrichia cinerascens* (Mg.), *Erioptera lutea* Mg., *Ormosia nodulosa* (Macq.), *O. depilata* Edwards and *Molophilus appendiculatus* (Staeg). On shingle above the water-line we found a small *Rhabdomastix* which keys out to *R. parva* in Coe (1950, R. Ent. Soc. Handbook, Nematocera). A most interesting capture was *Hexatoma fuscipennis* (Curtis), apparently new to Wales. This occurred in plenty, dancing in swarms over clumps of Giant Woodrush and ferns, with single specimens running on the silt by the edge of the river.

GLAN LLYN. G. R. 22/949688. Peat and clay drift. Rainfall 50-60 ins. Later in the day we collected here along the edge of a slow stream and amongst marsh vegetation at the outflow of the lake (alt. 750 feet). Small shallows lined the stream, and the marsh was dominated by *Phragmites*, with beds of sedges and rushes. We took *Tipula oleracea* L., *T. lateralis* Mg., *T. luna* Westhoff, *Prionocera turcica* (F.), *Rhipidia maculata*, *Trichyphona immaculata*, *Phylidorea fulvonervosa* (Sch.), *P. squalens* (Zett.), *Cheilotrichia cinerascens*, *Erioptera lutea*, *E. fuscipennis* Mg. and *E. trivialis* Mg. The small Ptychopterid *P. minuta* (Tonn.) was also taken in some numbers.

RHAYADER. G.R. 22/961681. On our way back to Rhayader, we stopped by the main road at a narrow strip of Alder carr (alt. 695 feet), on alluvial soil. In the swampy wood by the stream, where there was a luxuriant herb layer dominated by Marsh Marigold, *Oenanthe* sp., ferns and the grass *Phalaris arundinacea*, we took *Tipula variicornis*, *Cylindrotoma distinctissima* (Mg.), *Limonia nubeculosa*, *L. macrostigma* Sch., *Dicranomyia mitis*, *Trichyphona immaculata*, *Phylidorea fulvonervosa*, *Elaeophila maculata* (Mg.), *Pilaria nemoralis* (Mg.), *Erioptera lutea*, *Ilisia occoecata* (Edwards) and *Molophilus griseus* (Mg.). *Ptychoptera albimana* (F.) was also present.

A few yards upstream, the ground vegetation of the alder swamp was quite different. Perhaps because of grazing in the past, the treacherous ground was covered mainly by short grass. Species noted here were *Tipula luna*, *Dicranomyia fusca* (Mg.), *Pedicia rivosa* (L.), *Trichyphona immaculata*, *Elaeophila maculata*, *Cheilotrichia cinerascens*, *Erioptera lutea* and *E. trivialis*. *Ptychoptera albimana* was less frequent than in the other habitat.

ELAN VALLEY. G.R. 22/915660. Rainfall 60-70 ins. In the late afternoon of 1st June, we scrambled up a small mossy gorge cut in shales on the west-facing slopes below Glog Fawr. By the stream (alt. 850 feet), we took *Tipula luna*, *Limonia nubeculosa*, *Dicranomyia chorea* (Mg.), *D. mitis* and *Molophilus flavus* Goet.

MONTGOMERY, V.C. 47

DYLIFE. G.R. 22/864939. Rainfall 70 ins.+. On our way north on 2nd June, we stopped for a few minutes at Dylife (alt. 1150 feet), where on peaty ground with rushes and Marsh Violet we took *Tipula luna*, *Nephrotoma maculata* (Mg.)—a male with unusually dark stigma—*Trichyphona immaculata*, *Dicranota exclusa* (Walker) and *Erioptera trivialis*. In a *Juncus*/*Sphagnum* flush on the opposite side of the road (alt. 1240 feet) a *Dolichopeza albipes* (Stroem) was put up.

RHIW FAWR. G.R. 22/837955. Rainfall 70 ins. Our next brief stop was by the roadside in a remote part of the barren hills of Central Wales, where on the floor of a steep-sided north-west facing valley there was a *Juncus/Sphagnum* bog with a small stream (alt. 1450 feet). Here we found a few *Tipula subnodicornis* Zett., with *Nephrotoma maculata*, *Amalopsis occulta* (Mg.) and *Elaeophila trimaculata* (Zett.).

LLANFAIR CAEREINION. G.R. 33/095067. Rainfall 40 ins. We returned through Montgomeryshire on 5th June, and spent some time in a north-facing pedunculate oakwood sloping very steeply down to the Afon Banwy neu Einion (alt. 500-390 feet). The wood had been thinned and planted with conifers and hardwoods some 2-3 years previously, and there was a rich growth of grasses, buttercups, rosebay, etc. We had a varied haul here:—*Tipula variicornis*, *T. variipennis* Mg., *T. pseudovariipennis* Czizek, *T. unca* Wiedemann, *T. oleracea*, *T. luna*, *Dicranomyia mitis*, *D. modesta* (Mg.), *D. autumnalis* (Staeg.), *Austrolimnophila ochracea* (Mg.), *Pilaria nemoralis*, *Cheilotrichia cinerascens*, *Erioptera lutea*, *Ormosia nodulosa*, *Scleroprocta danica* Nielsen, *Molophilus griseus*, *M. cinereifrons* de Meij. and *Tasiocera fuscescens* Lacks.

At the foot of the slope, the river was about 30 yards wide but very shallow, the bed a dip section of highly inclined shales forming ridges. A zone of lush vegetation formed an island along the centre of the river, with tall grasses, *Oenanthe* sp. and willow. The whole situation was well sheltered by the tall trees (largely ash) on either side. Here *Tipula montium* was common, and *T. flavolineata* Mg. frequent. *T. luna*, *Limonia nubeculosa* (only under the river bank), *Rhipidia maculata*, *Crunobia littoralis* (Mg.), *Erioptera lutea* and *Molophilus appendiculatus* were also taken.

MERIONETH, V.C. 48

CADER IDRIS. The fine, warm afternoon (2nd June) we spent in the National Nature Reserve on the southern side of Cader Idris proved disappointing so far as crane-flies were concerned. Annual rainfall here ranges from 80 to over 100 ins., and the acid rocks are largely volcanic in origin.

Just before entering the Reserve at Dol-y-cae, we caught a male *Tipula hortuana* Mg. in the boulder-strewn conifer plantation at GR. 728115. Inside the Reserve among mossy boulders underneath Sycamore we flushed *T. variicornis*, *T. alpium* Berg. and *T. pabulina* Mg.

We followed the stream up through the steep oakwood above Dol-y-cae. Among the boulders, rapids and waterfalls, we found the ubiquitous *T. variicornis*, *Dolichocheza albipes*, *Limonia nubeculosa*, *Dicranomyia mitis*, *D. fusca*, *Trichyphona schummeli* (Edwards) and *Pilaria nemoralis*. Just above the wood, *T. variicornis* and *Pedicia rivosa* occurred among flushes on the steep peaty slope, while *T. subnodicornis* was seen on *Sphagnum* bog below Llyn Cau. Around dry rocks on the ridge of Craig Lwyd at 2,200 feet, *Tipula alpium* was abundant, and this species was also noticed on the steep north-facing bilberry slopes down to 1,550 feet.

LLANELTYD. G.R. 23/705195. Rainfall 60 ins. Early on 3rd June, we stopped the car at the edge of the wide Mawddach Estuary, and descended the short Hawthorn-covered slope to the marshy (but not noticeably brackish) ground, where we took a fine male of *Tanyptera atrata* v. *ruficornis**, and also *Tipula oleracea*, *T. luna*, *Prionocera turcica*, *Trichyphona immaculata*, *Phylidorea fulvonervosa*, *P. ferruginea* (Mg.),

Elaeophila maculata, *Pseudolimnophila lucorum* (Mg.), *Pilaria discicollis* (Mg.) and *Erioptera fuscipennis*.

We visited this locality again on 5th June, concentrating this time on the bracken, grasses and low herbage at the edge of the wooded slope. Here we took *Tipula flavolineata*, *Dicranomyia autumnalis*, *Trichyphona immaculata*, *Epiphragma ocellaris* (L.), *Phylidorea fulvonervosa*, *Pilaria adjuncta* (Walker) and *Molophilus medius* de Meij. Farther out on the marsh, we added *Tipula unca* and *Ptychoptera minuta* to the list for this locality.

MORFA DYFFRYN. G.R. 23/572226. Rainfall 40 ins.+ . The southern end of the dunes, visited on 3rd June, proved more interesting for flies of other groups, but we found *Nephrotoma submaculosa* Edwards to be quite common among the marram-grass.

MORFA HARLECH. G.R. 23/568328. Rainfall 40 ins. We went on from Morfa Dyffryn to collect on this National Nature Reserve, but again we found that sand dunes are not good crane-fly country. In addition to *Nephrotoma submaculosa* we saw a few *Tipula variicornis* in the damper areas.

CWM BYCHAN. G.R. 23/648310. Rainfall 70-80 ins. Later in the afternoon of 3rd June, we went inland to the north-facing oak woodland on grits at the head of Cwm Bychan. Following the rocky stream upwards (alt. 600-800 feet) through the wood, we found *Tipula variicornis*, *Limonia nubeculosa* and *Dicranomyia mitis* to be abundant. Other species occurring were *Tipula variipennis*, *T. alpium*, *T. flavolineata*, *T. luna*, *Dolichozepea albipes*, *Trichyphona schummeli*, *Epiphragma ocellaris* (mainly on dead birch leaves in the lower part of the wood), *Phylidorea phaeostigma* (Sch.), *P. squalens* and *Pilaria nemoralis*.

Many empty pupae of *T. flavolineata* were seen protruding from a fallen birch trunk in a clearing, and on removing some of the bark, live pupae were found in the powdery wood immediately beneath. A male was bred through to confirm the identification.

Above the wood, we emerged into open heathery ground, and by the rocky stream here we took *Tipula variicornis* and *T. variipennis*.

CEUNANT LLENNYRCH. G.R. 23/661391. Rainfall 60-70 ins. We spent the early morning of 4th June in this steep-sided wooded ravine. Working upwards from Ivy Bridge at Maentwrog, we found the following species abundant along the lower 400 yards of the stream, and on the rocks at its margin:—*Tipula variicornis*, *Dolichozepea albipes*, *Limonia nubeculosa*, *Dicranomyia mitis* and *Austrolimnophila ochracea*. Less common species were *Dicranomyia decem-maculata* Loew, *D. fusca*, *D. aquosa* Verrall, *Rhipidia maculata*, *Phylidorea fulvonervosa*, *Pilaria nemoralis*, *Lipsothrix errans* and *Scleroprocta danica*.

In the oak and birch woods above the ravine (on the west bank) we found *Tipula maxima* Poda in a patch of willow carr, *T. pabulina*, *T. flavolineata*, *Dolichozepea albipes*, *Limonia flavipes* (F.), *L. tripunctata* (F.), *Dicranomyia dumetorum* Mg., *D. mitis*, *Rhipidia maculata*, *Epiphragma ocellaris*, *Austrolimnophila ochracea*, *Pilaria nemoralis*, *Ormosia nodulosa*, *Molophilus obscurus* (Mg.) and *M. flavus*.

We paid special attention to a large patch of *Allium ursinum* (Ran-soms) occupying a basic flush coming from a dolerite dyke, and found *Limonia flavipes* and *Austrolimnophila ochracea* in some numbers, with

odd specimens of *Tipula rufina* Mg., *Ula sylvatica* (Mg.), *Epiphragma ocellaris*, *Molophilus serpentiger* Edwards and *M. appendiculatus*. A patch of *Mercurialis perennis* (Dog's Mercury) under Hazel produced *Limonia flavipes*, *Austrolimnophila ochracea* and *Ormosia nodulosa*.

COED Y RHYGEN. G.R. 23/678370. Rainfall 70-80 ins. Later in the morning we visited the western part of this National Nature Reserve on the shore of Trawsfynydd Reservoir. The nuclear power station for which the reservoir was constructed is expected to warm up the water in the reservoir and so have a slight effect on the climate in this Reserve. Present records of the insect fauna may, therefore, be of considerable interest in the future.

Unfortunately, the vegetation in this oak and birch woodland was too wet for sweeping, but in a boggy clearing where Bog Myrtle was abundant (alt. 750 feet), we found *Tipula variicornis*, *Amalopis occulta*, *Phylidorea squalens*, *Pilaria nemoralis*, *Gonomyia dentata* de Meij., *Cheilotrichia cinerascens*, *Ormosia nodulosa*, *Scleroprocta danica* and *Molophilus flavus*. We failed to find any *Triogma trisulcata* (Sch.) which A.E.S. had taken here in early May 1965.

At the margin of the wood, a very large female *Tipula* was caught near the ground, which subsequently appeared to be only a dark-winged form of *T. scripta* Mg.

HARLECH. G.R. 23/590316. Rainfall 45 ins. Apart from a male *Pedicia rivosa* found in the bathroom on 3rd June, our collecting here was done by the A496 on 5th June, when we ventured a few yards into an ash wood with some sycamore on a steep boulder-strewn slope facing north-west. The ground vegetation was mainly large fern clumps and grass. A remarkable absentee was *Tipula variicornis*, which had been so abundant in most of the other woods visited. Species taken here were *T. unca*, *T. oleracea*, *T. lunata* L., *Limonia nubeculosa*, *L. flavipes*, *L. tripunctata* (found plentifully for the first time), *Rhipidia maculata*, *Austrolimnophila ochracea* and *Molophilus griseus*.

BONTDDU. G.R. 23/660184. Rainfall 50 ins.+. Later on 5th June, we stopped at a polluted roadside marsh on the edge of the Mawddach Estuary. Reeds, Bog Myrtle and some sallows were present, and the crane-flies taken were *Limonia flavipes*, *Trichyphona immaculata*, *T. unicolor* (Sch.), *Phylidorea fulvonervosa* and *Erioptera fuscipennis*.

CAERNARVON, V.C. 49

TREMADOC. G.R. 23/573405. A rushy field opposite Coed Tremadoc yielded only *Tipula luna* on 4th June.

CRICCIETH. G.R. 23/512381. Rainfall 40 ins. On 4th June, we spent a short time in a very wet peaty sallow copse behind the coastal railway, where, in early May 1965, A.E.S. had taken *Ptychoptera minuta*. A small pool with Bog Bean was surrounded by *Juncus*, and the carr vegetation included *Dryopteris* and other tall plants. Here we took *Dicranomyia fusca*, *D. autumnalis*, *Rhipidia maculata*, *Helius longirostris* (Mg.), *Phylidorea ferruginea*, *Pilaris discicollis*, *P. adjuncta*, *Cheilotrichia cinerascens*, *Erioptera lutea*, *E. fuscipennis* and *Molophilus griseus*.

*We learned later that K. C. Side had taken a male of this species in a similar habitat at Llanfihangel, some six miles to the south, on 30th May.